CLAIMS

1. A flow meter comprising:

   a. a housing;

   b. a cylindrical flow chamber disposed in the housing and having an interior cylindrical wall;

   c. a rotor rotatively mounted within the flow chamber;

   d. an inlet formed in the housing and open to the chamber for directing fluid into the chamber;

   e. an outlet formed in the housing and open to the chamber for directing fluid from the chamber;

   f. the inlet and outlet being axially spaced with respect to the flow chamber;

   g. the rotor mounted between the inlet and outlet but axially spaced from both the inlet and the outlet;

   h. the inlet oriented with respect to the interior cylindrical wall of the cylindrical flow chamber such that the fluid directed into the chamber via the inlet is directed generally tangential to the interior wall of the chamber; and

   i. wherein the orientation of the inlet with respect to the rotor and interior wall of the chamber causes the fluid directed into the chamber to spiral around the interior wall and move from the inlet around the rotor, causing the rotor to rotate, and out the outlet.

2. The flow meter of claim 1 wherein the cylindrical flow chamber is formed by the housing and a pair of opposed threaded plugs secured within threaded portions of the housing.

3. The flow meter of claim 2 wherein each threaded plug includes an inner end portion; and wherein the rotor rotates about a shaft that extends through the rotor and is received in the inner end portions of the threaded plugs.

4. The flow meter of claim 3 wherein each end portion of the threaded plug includes a face, and wherein the rotor is supported between the faces of the threaded plugs such that the rotor is generally spaced from the faces.

5. The flow meter of claim 1 wherein the outlet is oriented generally tangential to the cylindrical interior wall of the flow chamber.

6. The flow meter of claim 5 wherein the outlet is larger than the inlet.

7. The flow meter of claim 1 including a sensor for determining the rotational speed of the rotor.

8. The flow meter of claim 1 wherein the cylindrical cylinder is oriented such that the axis of the cylinder extends vertically, and wherein the inlet is disposed below the rotor and the outlet is disposed above the rotor.

9. The flow meter of claim 1 wherein the flow meter is adapted to be stationed when measuring flow such that the axis of the chamber extends generally vertically and the inlet is disposed below the rotor and the outlet is disposed above the rotor, and wherein the flow of fluid through the chamber is generally upward.

10. The flow meter of claim 1 wherein the flow chamber is elongated.

11. A method of measuring fluid flow, comprising:

a. directing fluid into an inlet to a cylindrical flow chamber having a cylindrical interior wall such that the fluid enters the chamber in a direction generally tangential to the interior wall;

b. moving the fluid from the inlet axially through the chamber and wherein as the fluid moves axially through the chamber, at least

some of the fluid tends to move through the chamber in a spiraling fashion;

c. the fluid engaging a rotor rotatively mounted generally about the axis of the chamber;

d. the rotor being axially spaced from the inlet where the fluid entered the chamber;

e. the fluid rotating the rotor as the fluid moves past the rotor; and

f. directing the fluid out an outlet axially spaced from the rotor and disposed opposite the inlet such that the rotor lies between the inlet and the outlet.

12. The method of claim 11 wherein the outlet is oriented generally tangential to the interior wall of the chamber.

13. The method of claim 11 wherein the fluid upon initially entering the chamber will move axially through the chamber before engaging the rotor, after engaging the rotor the fluid will move still further axially without engaging the rotor before being directed out of the chamber.

14. The method of claim 11 wherein the fluid spirals through the chamber and engages and rotates the rotor.

15. The method of claim 11 including measuring the flow rate of fluid passing through the chamber by measuring the revolutions of the rotor.

16. The method of claim 11 including vertically orienting the chamber such that the inlet is disposed below the outlet such that the fluid passing through the chamber must move upwardly.

17. The method of claim 16 including fixing the flow meter such that the flow of fluid through the chamber must move upwardly around the vertical axis of the chamber.

18. A flow meter for measuring fluid flow, comprising:

a. a housing;

b. a cylindrical flow chamber having a cylindrical interior wall, an axis, and opposed end portions;

c. an inlet formed at one end portion of the chamber for directing fluid into the chamber;

d. an outlet formed at the other end portion of the chamber for directing fluid out of the chamber;

e. wherein the inlet and outlet are axially spaced and disposed on opposite end portions of the chamber;

f. a rotor rotatively mounted about the axis of the chamber and axially spaced between the inlet and outlet such that the inlet, outlet and rotor lie in separate transverse planes; and

g. wherein the chamber, inlet, outlet, and rotor are arranged such that the fluid entering the chamber at the inlet is constrained to move axially through the chamber past the rotor and then to the outlet where the fluid exits the chamber.

19. The flow meter of claim 18 wherein the housing includes a bore extending entirely through the housing and wherein opposed ends of the bore are threaded; and wherein the flow meter includes a pair of threaded plugs secured into the opposed ends of the bore, and wherein the flow chamber is formed by the housing, the bore, and the threaded plugs.

20. The flow meter of claim 18 wherein the inlet enters the chamber generally tangential to the interior cylindrical wall of the chamber.

21. The flow meter of claim 20 wherein the outlet enters the chamber generally tangential to the interior cylindrical wall of the chamber.

22. The flow meter of claim 18 wherein the flow chamber is elongated.